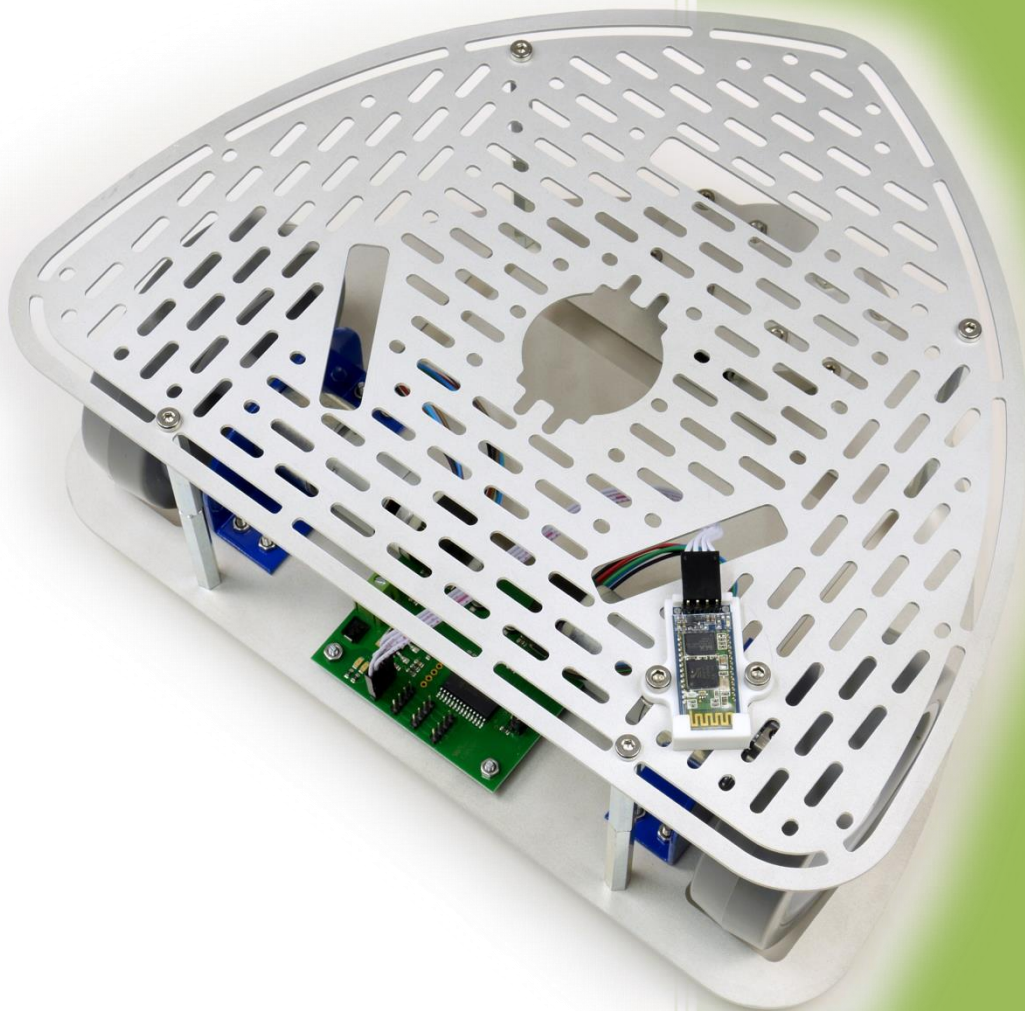


MANU SYSTEMS

WORLDofROBOTS

2016

WOR-0004



Manu Systems AG

09.06.2016

Version 4.1

WORLD OF ROBOTS

Online Information	4
Deutsch.....	4
English	4
Verpackungsinhalt prüfen / Check box content.....	5
Module auspacken / Unpack parts.....	6
WOR-0001	6
WOR-0002	7
WOR-0003	8
WOR-0003-0001	8
WOR-0003-0002	9
WOR-0003-0003	10
WOR-0005 (Download)	10
Zusammenbau / Assembly	12
Schritt / Step 1.....	12
Schritt / Step 2.....	13
Schritt / Step 3.....	16
Schritt / Step 4.....	17
Schritt / Step 5.....	18
Schritt / Step 6.....	20
Schritt / Step 7.....	21
Schritt / Step 8.....	23
Schritt / Step 9.....	24
Schritt / Step 10.....	26
Das Kabel richtig anschließen / Connect the cable correctly	26
Serielle Verbindung auswählen / select serial connection	28
Inbetriebnahme / Initial operation	28
Energie / Power	28
12 V.....	28
Stationäre Energieversorgung / Stationary power supply for testing if required.....	28
Mobile Energieversorgung / mobile energy supply	29
Communication	30
Installation.....	30
Verbinden / Connecting	31
Steuerung / Driving	32

Online Information



Deutsch



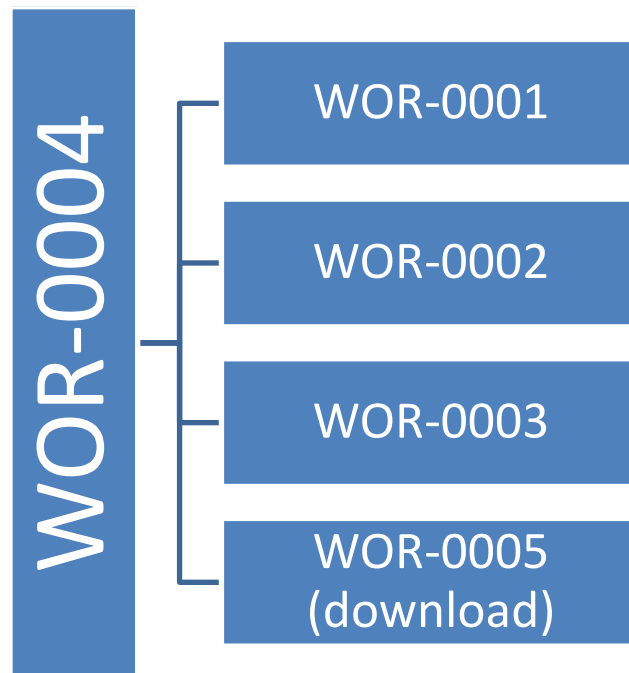
<http://de.manu-systems.com/WOR-0004.shtml>

English



<http://en.manu-systems.com/WOR-0004.shtml>

Verpackungsinhalt prüfen / Check box content



Module auspacken / Unpack parts

WOR-0001



<http://de.manu-systems.com/WOR-0001.shtml> / <http://en.manu-systems.com/WOR-0001.shtml>

<http://de.manu-systems.com/MD25.shtml> / <http://en.manu-systems.com/MD25.shtml>

<http://www.robot-electronics.co.uk/hm/md25tech.htm>

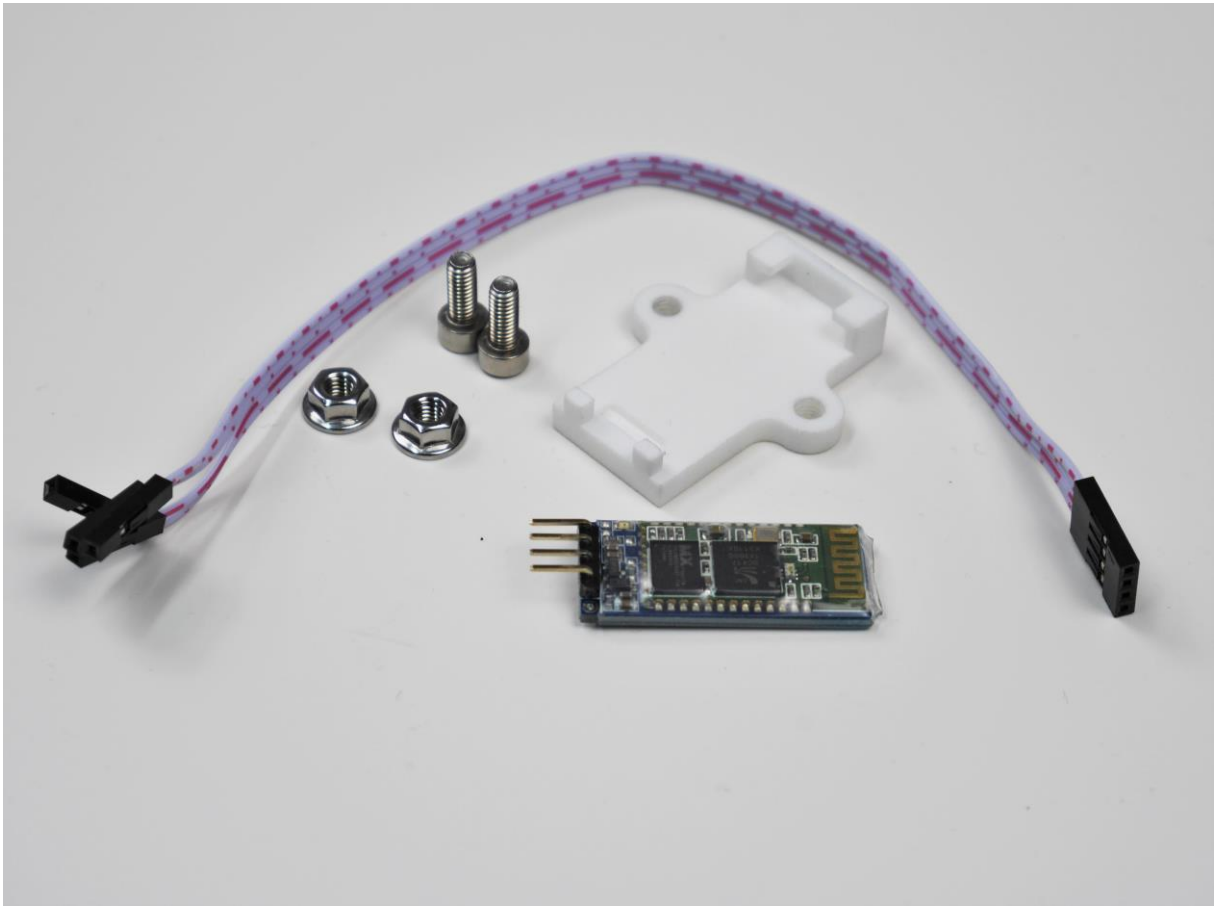
<http://www.robot-electronics.co.uk/hm/md25ser.htm>

<http://de.manu-systems.com/EMG30.shtml> / <http://en.manu-systems.com/EMG30.shtml>

<http://de.manu-systems.com/EMG30BRACKET.shtml> / <http://en.manu-systems.com/EMG30BRACKET.shtml>

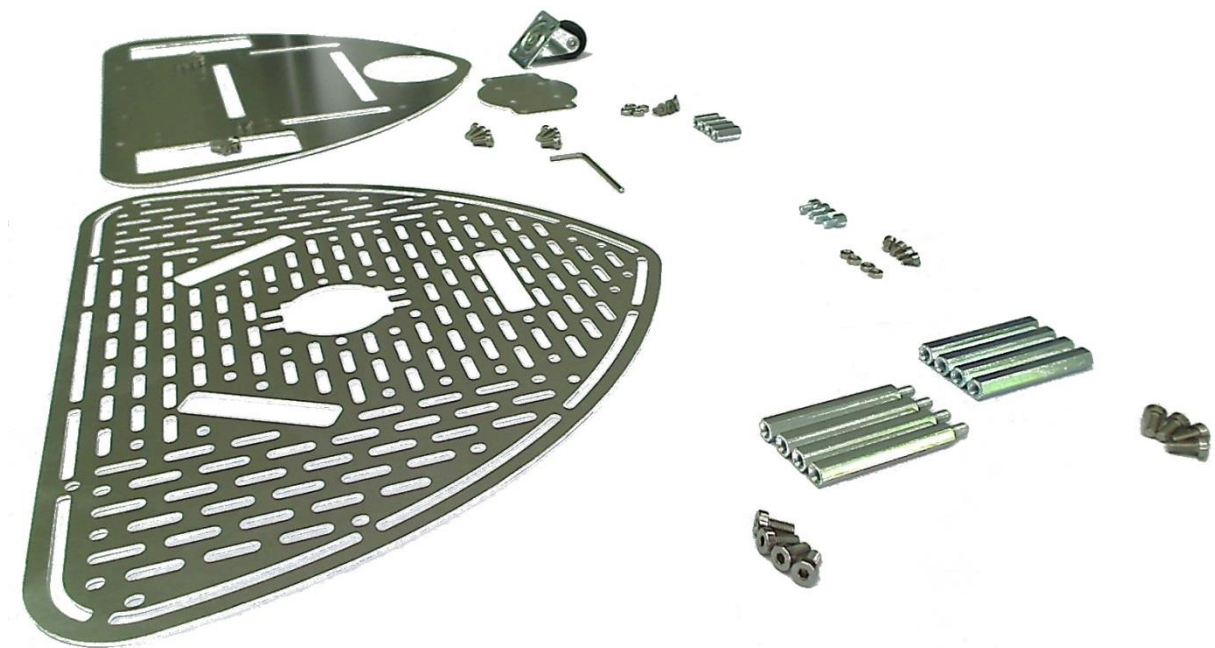
<http://de.manu-systems.com/WHEEL100.shtml> / <http://en.manu-systems.com/WHEEL100.shtml>

WOR-0002



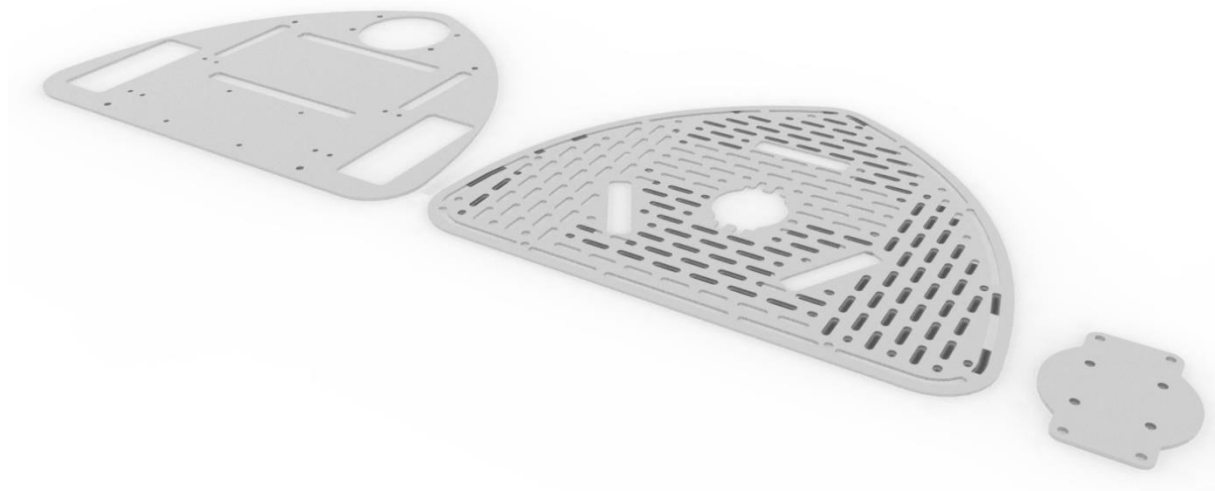
<http://de.manu-systems.com/WOR-0002.shtml> / <http://en.manu-systems.com/WOR-0002.shtml>

WOR-0003



<http://de.manu-systems.com/WOR-0003.shtml> / <http://en.manu-systems.com/WOR-0003.shtml>

WOR-0003-0001

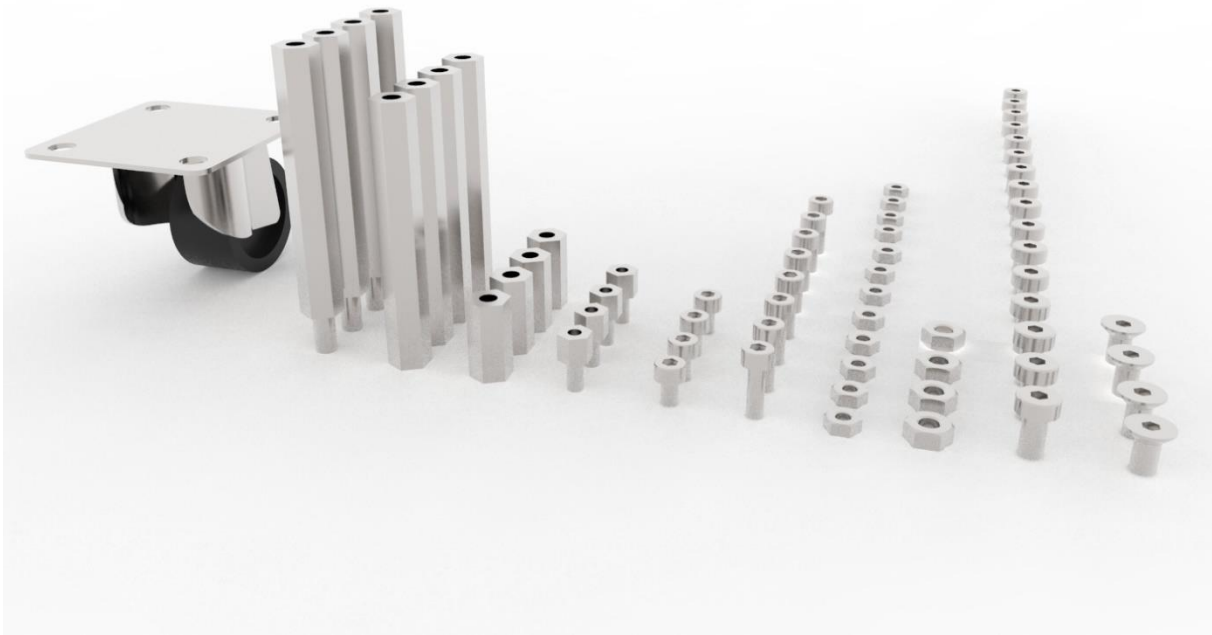


1x Grundplatte / base plate

1x Sensorplatte / sensor plate

1x Adapterplatte für Lenkrolle / adaptor plate for swivel

WOR-0003-0002



1x Lenkrolle / castor

4x M4x50 mm, 1x Innengewinde / internal thread, 1x Außengewinde / external thread

4x M4x50 mm, 2x Innengewinde / internal thread

4x M4x15 mm, 2x Innengewinde / internal thread

4x M3x5 mm, 1x Innengewinde / internal thread, 1x Außengewinde / external thread

4x DIN 912 M3x5 mm

8x DIN 912 M3x10 mm

12x DIN 934 M3

4x DIN 934 M4

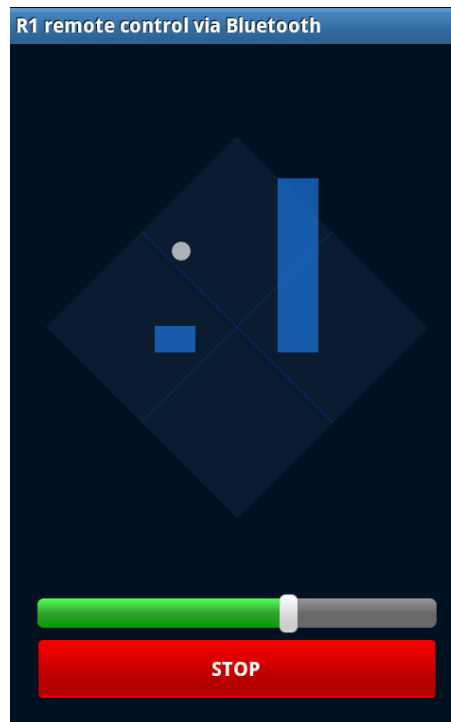
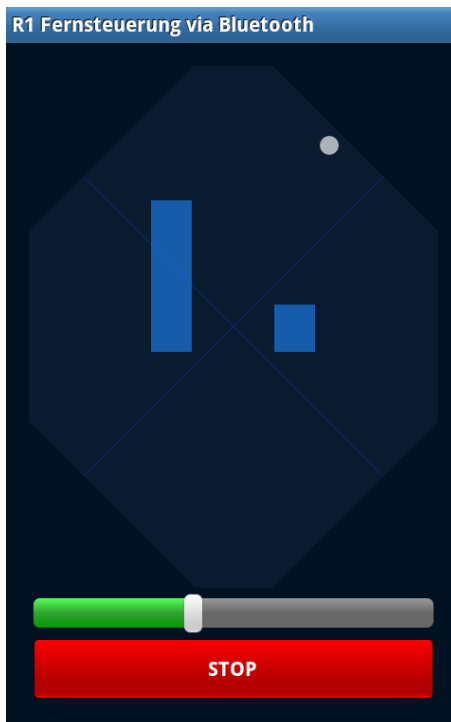
16x DIN7984 M4x8 mm

4x DIN 7991 M4x8 mm

WOR-0003-0003

1x Standard-Kabelbinder, 100 mm x 2.5 mm

WOR-0005 (Download)

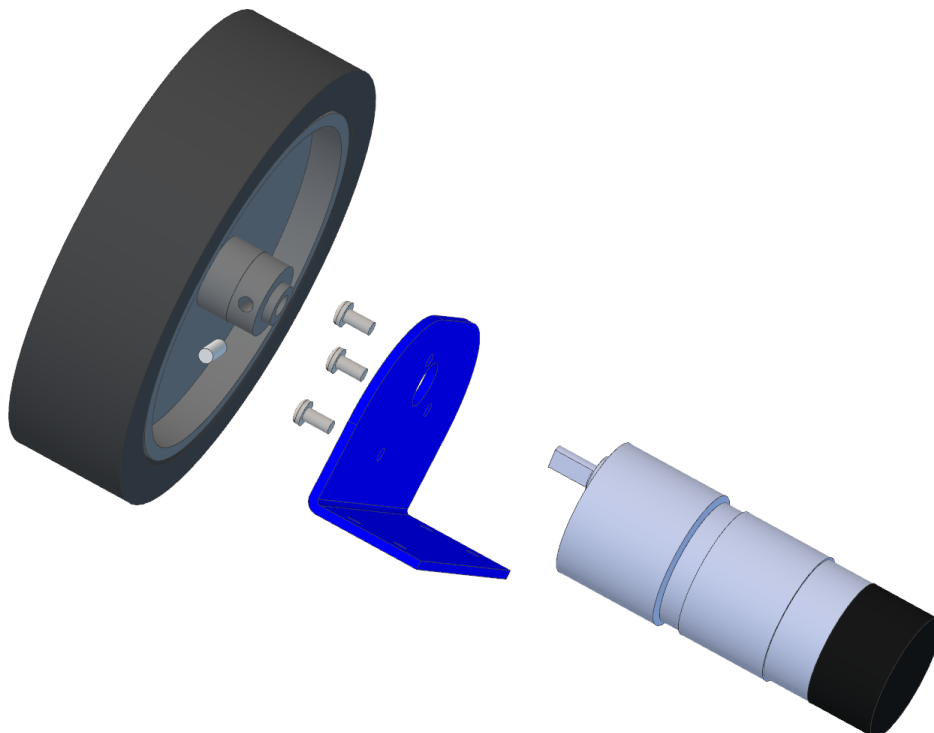
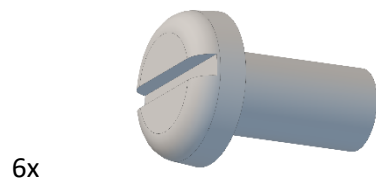
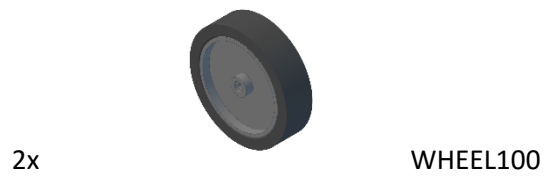
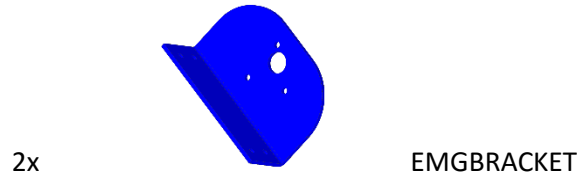
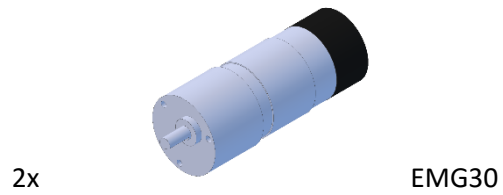


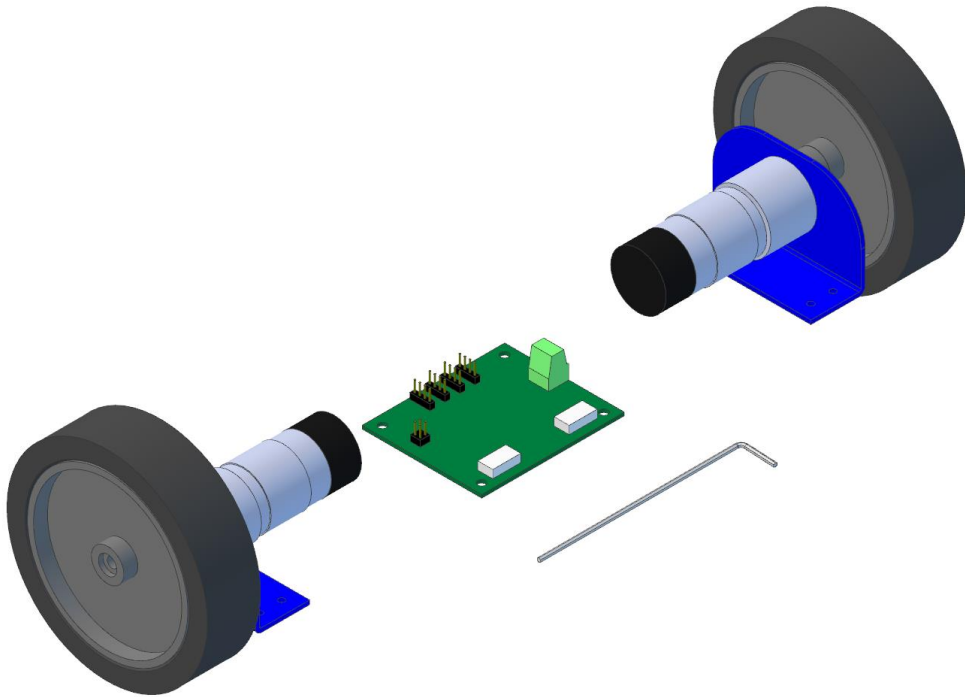
<http://de.manu-systems.com/WOR-0005.shtml> / <http://en.manu-systems.com/WOR-0005.shtml>



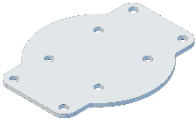
Zusammenbau / Assembly

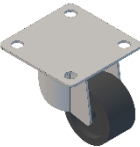
Schritt / Step 1

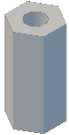


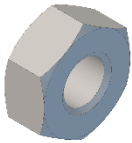


Schritt / Step 2

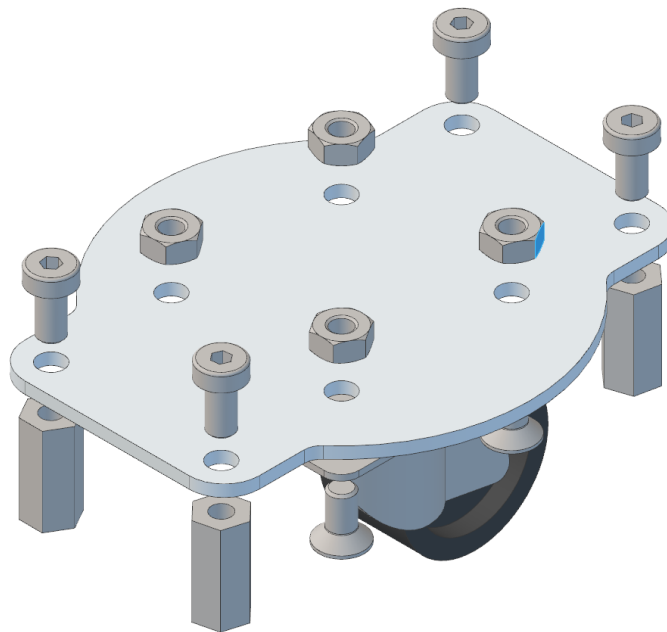
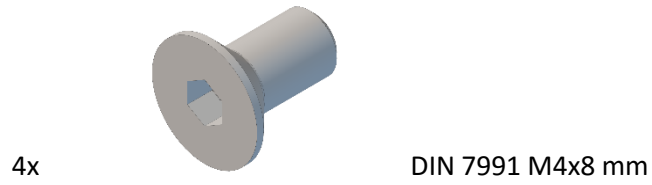
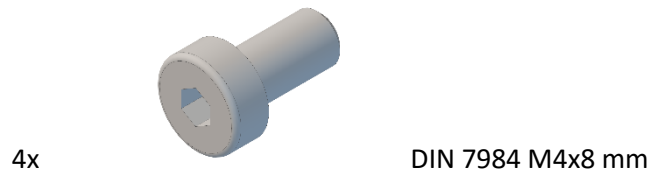
- 

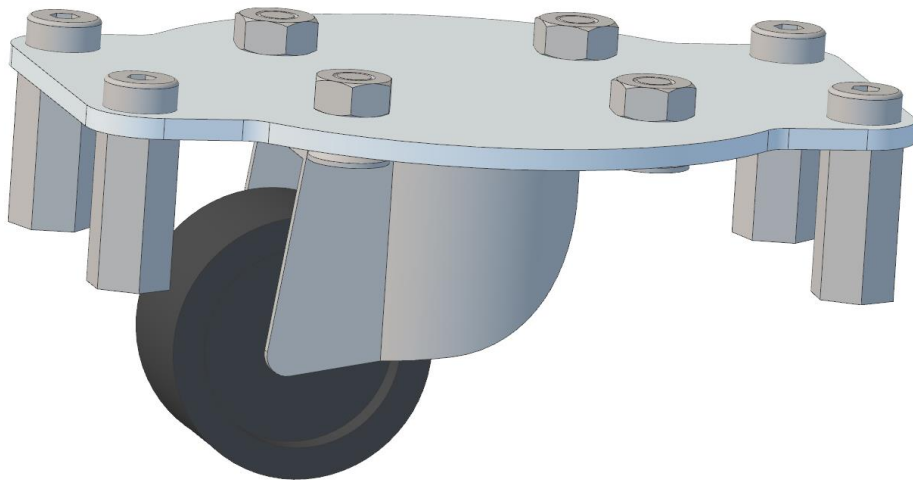
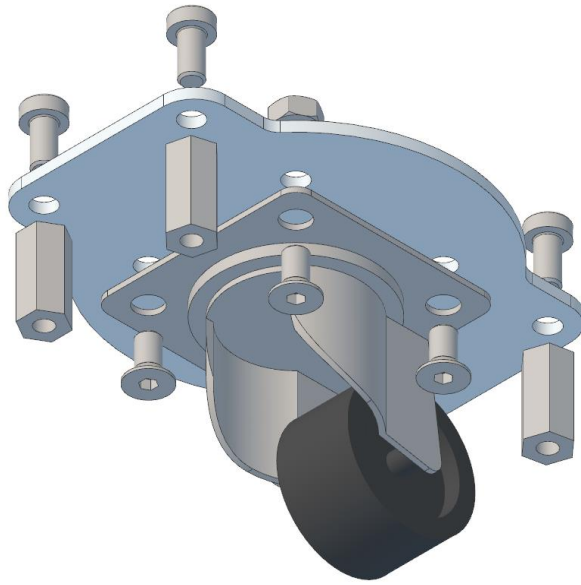
1x Adapterplatte für Lenkrolle / adaptor plate for swivel
- 

1x Lenkrolle / castor
- 

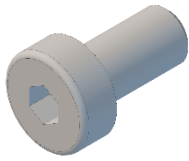
4x M4x15 mm, 2x Innengewinde / internal thread
- 

4x DIN 934 M4



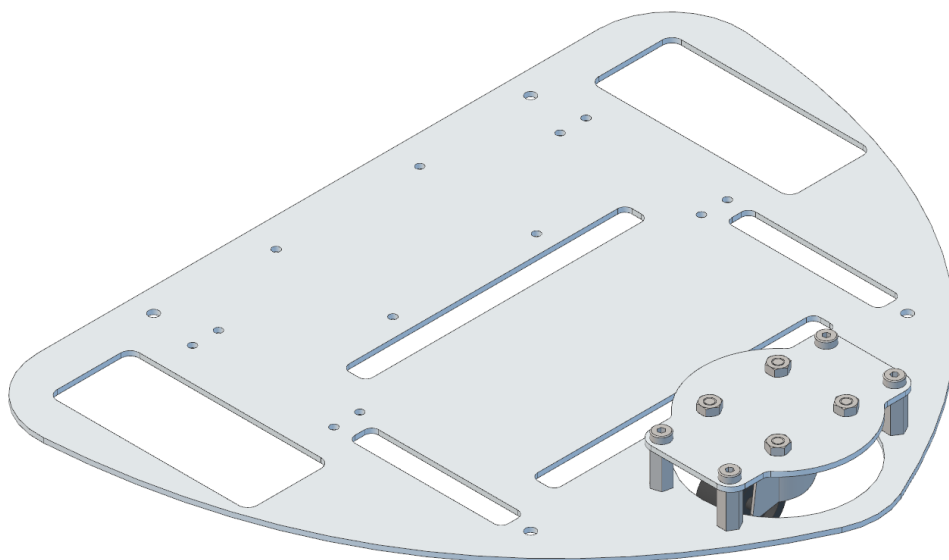
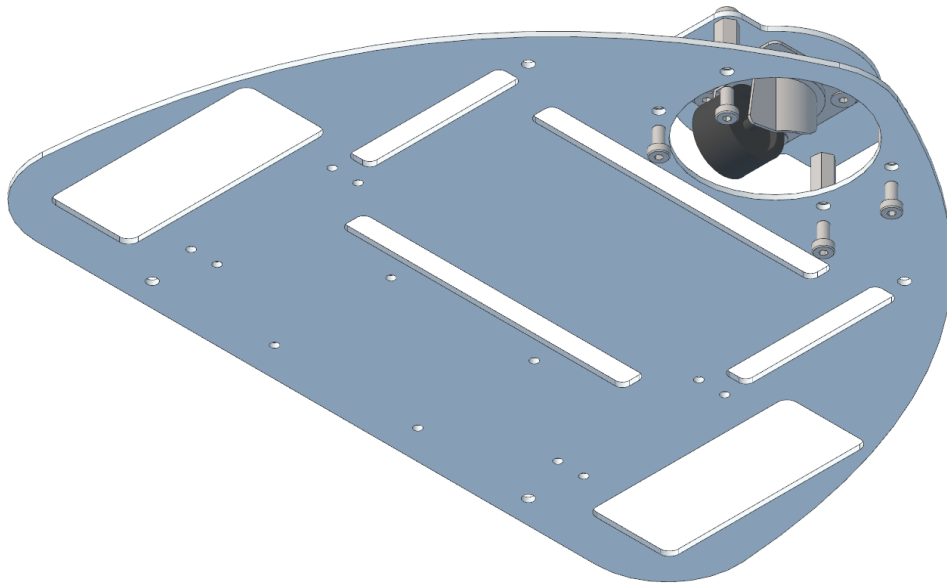


Schritt / Step 3



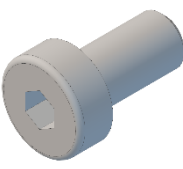


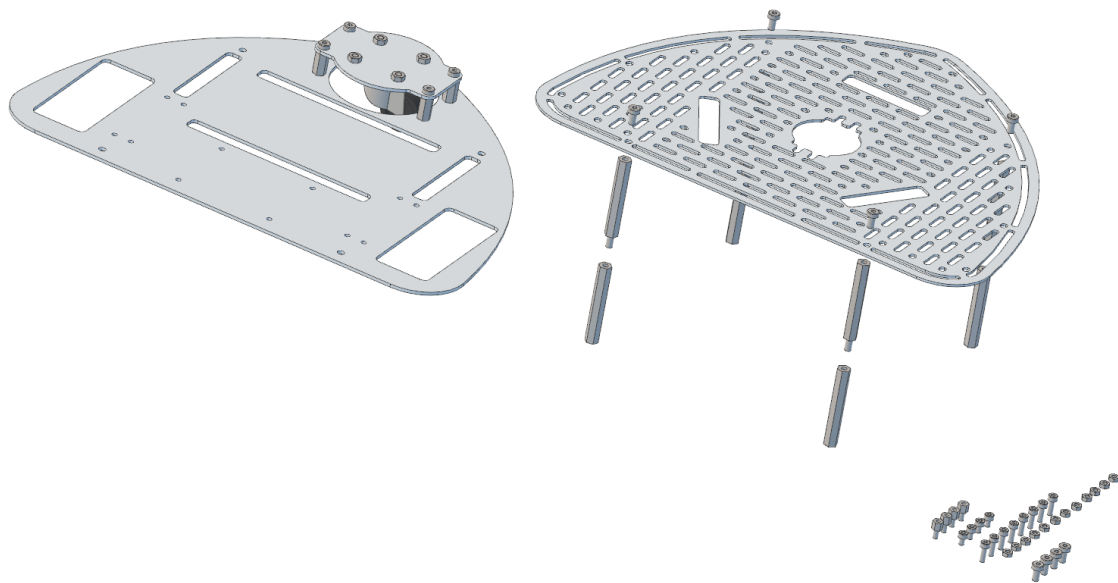
4x

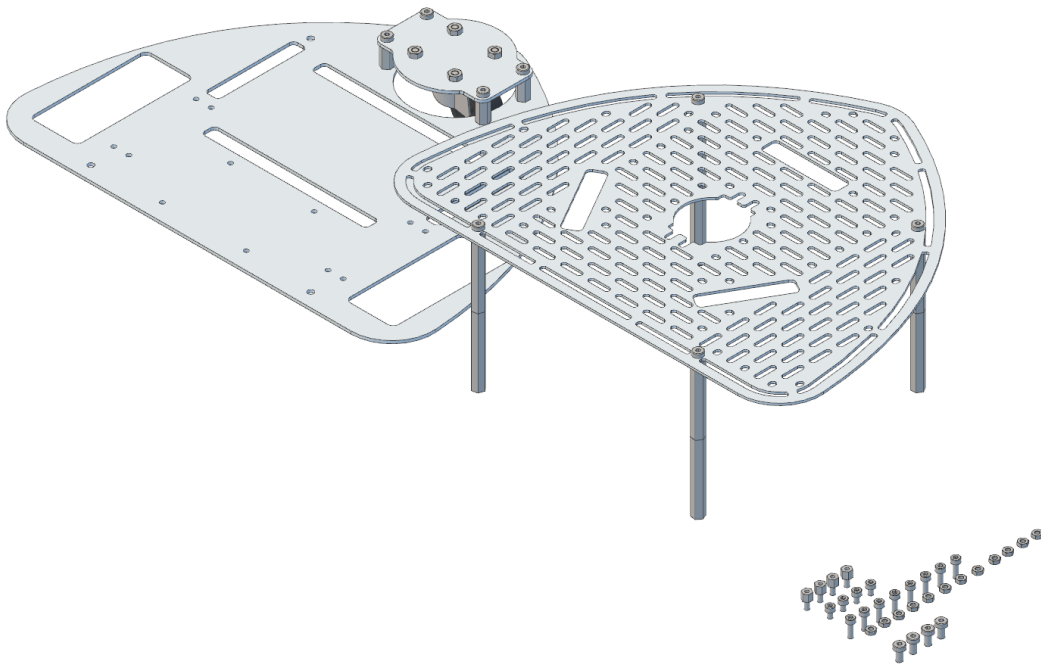
DIN 7984 M4x8 mm



Schritt / Step 4

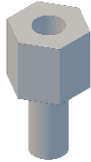
- 4x  M4x50 mm, 1x Innengewinde / internal thread
- 4x  M4x50 mm, 2x Innengewinde / internal thread
- 4x  DIN 7984 M4x8 mm





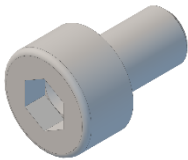
Schritt / Step 5

4x

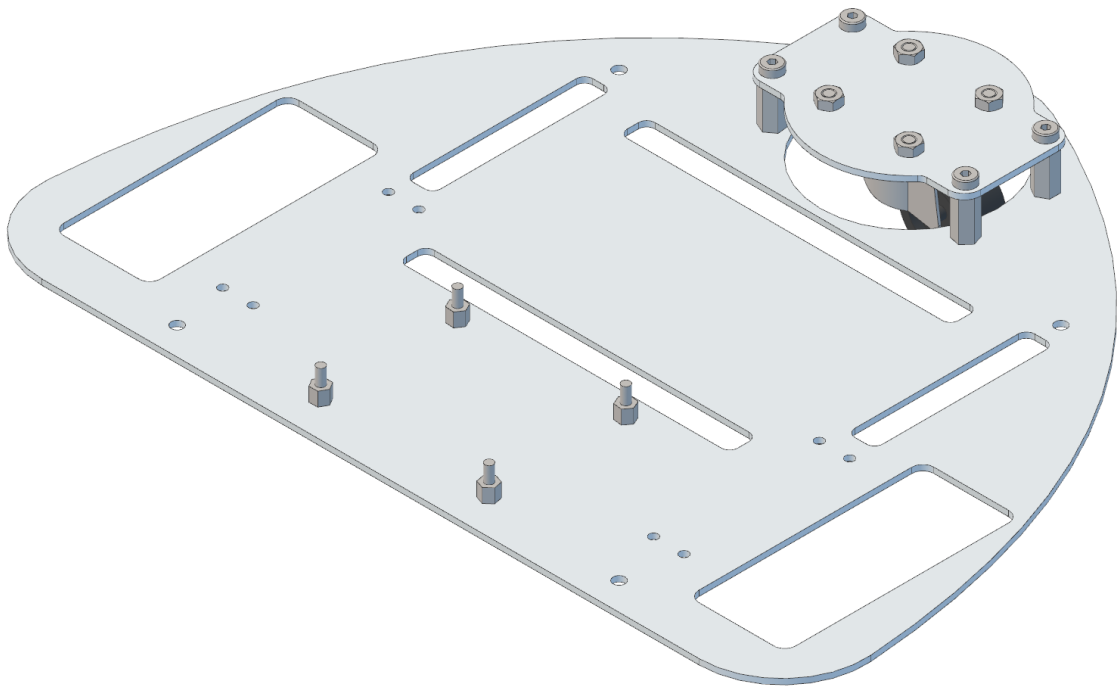
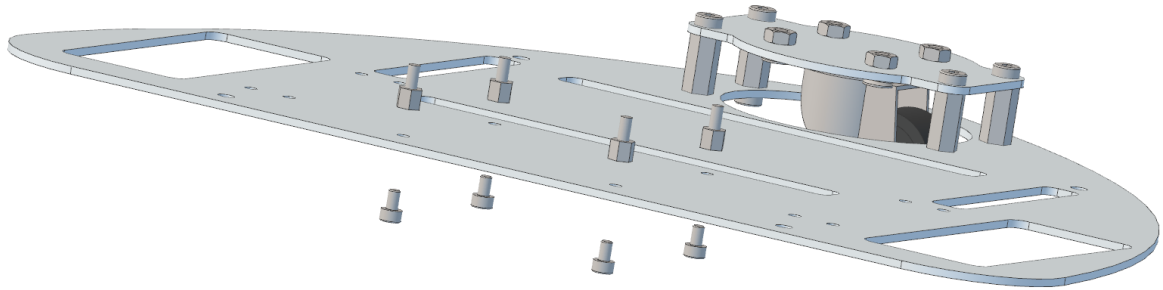


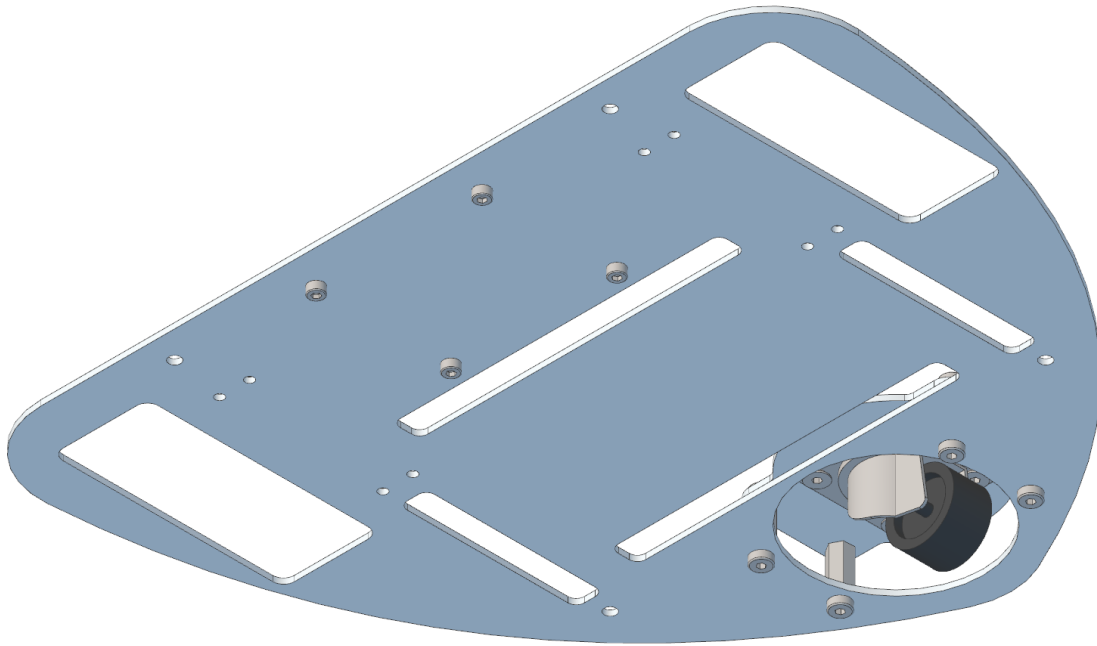
M3x5 mm, 1x Außengewinde / external thread

4x

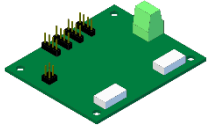
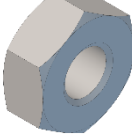


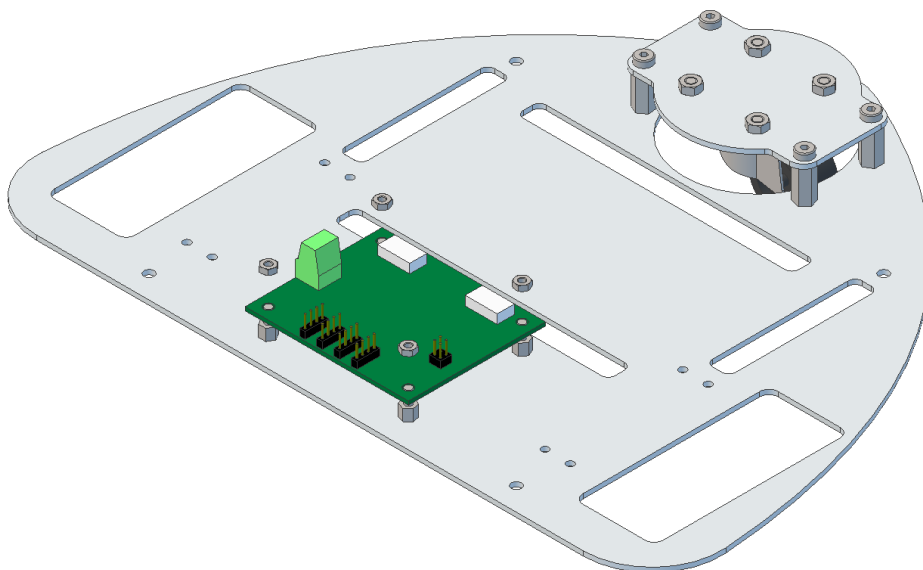
DIN 912 M3x5 mm

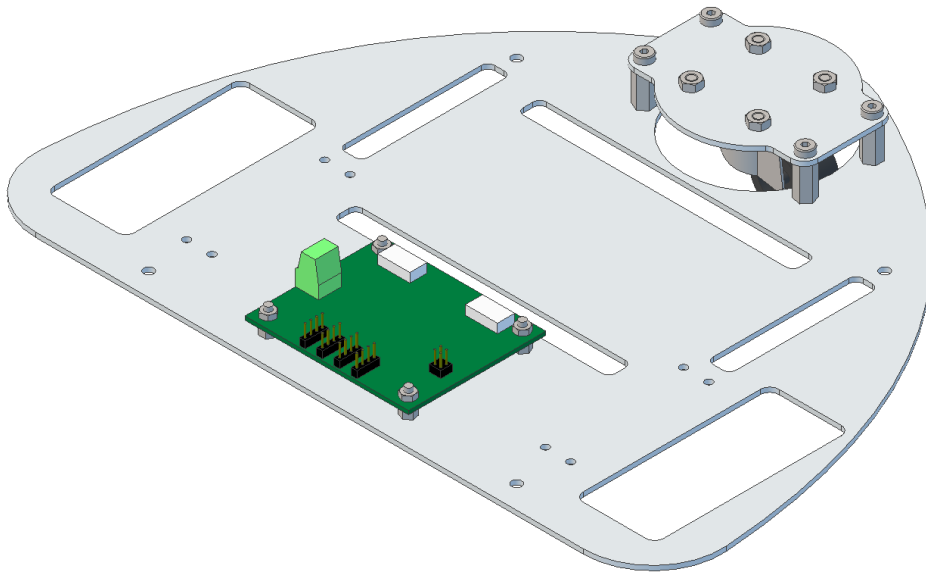




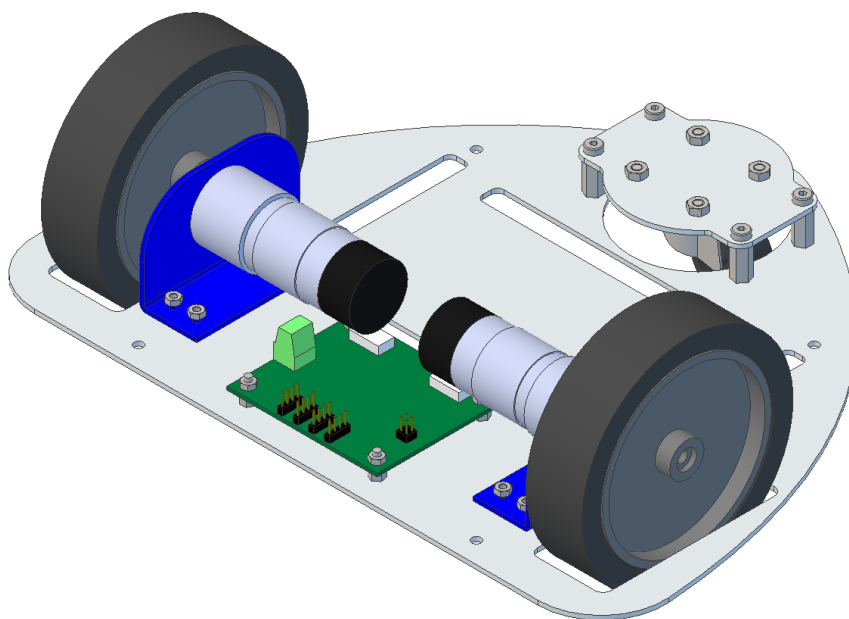
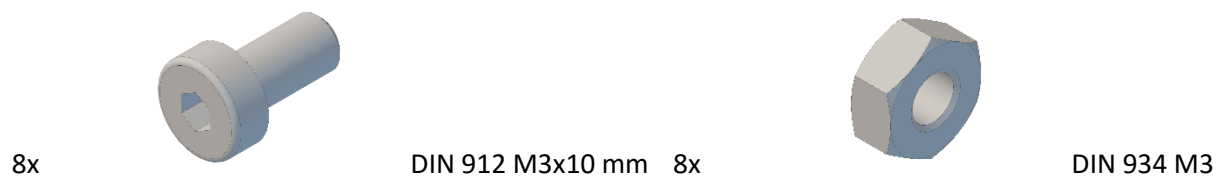
Schritt / Step 6

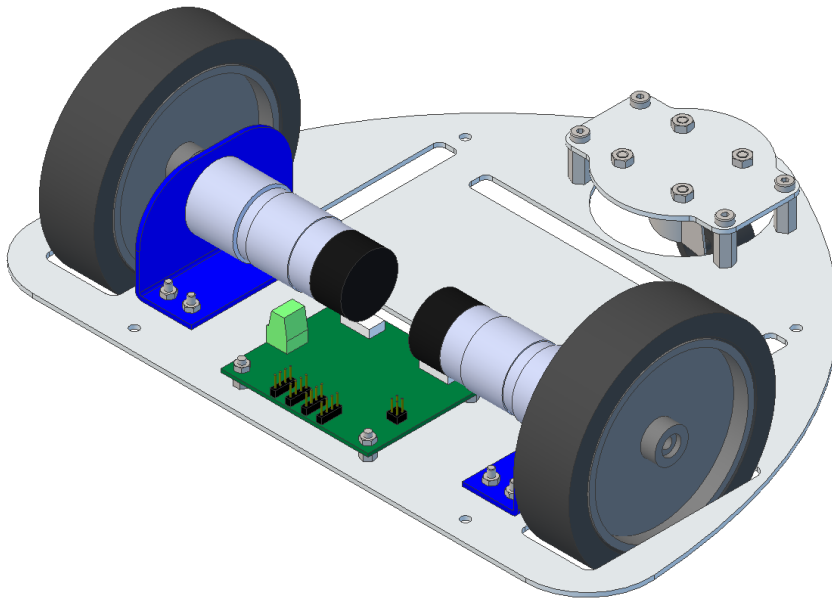
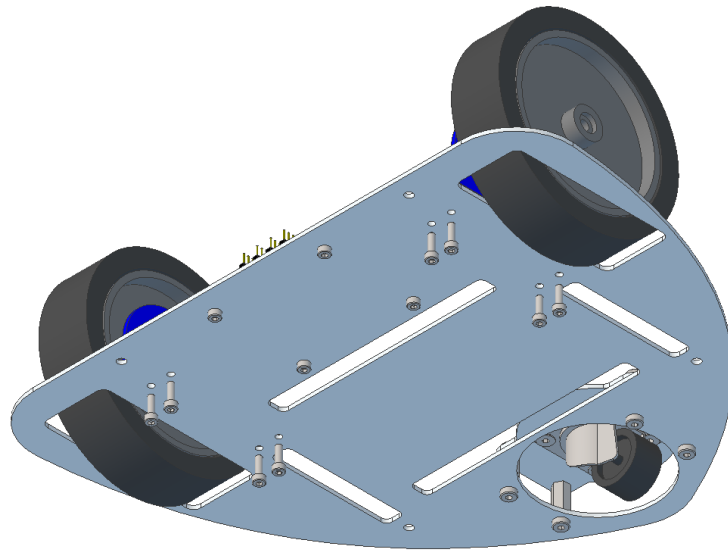
- 1x  MD25 4x  DIN 934 M3

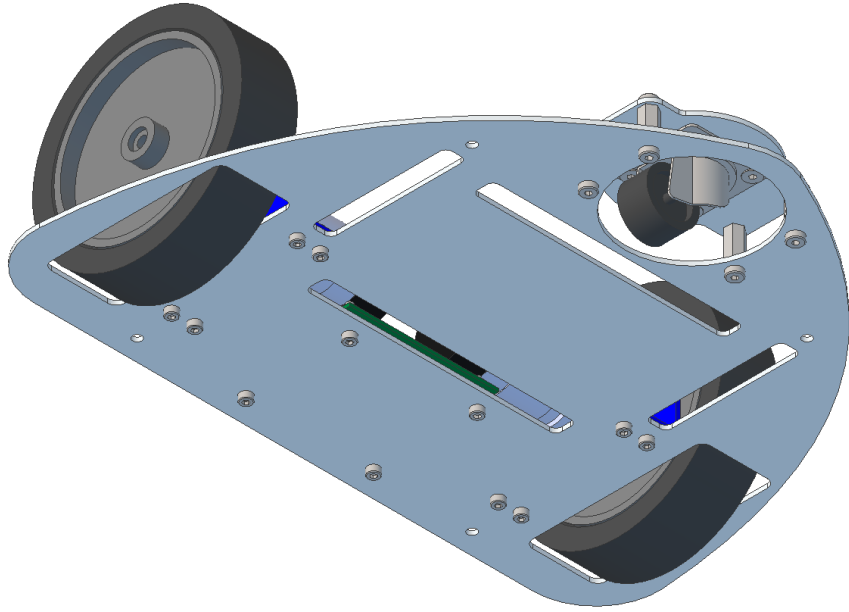




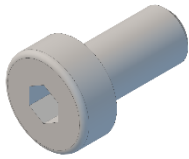
Schritt / Step 7





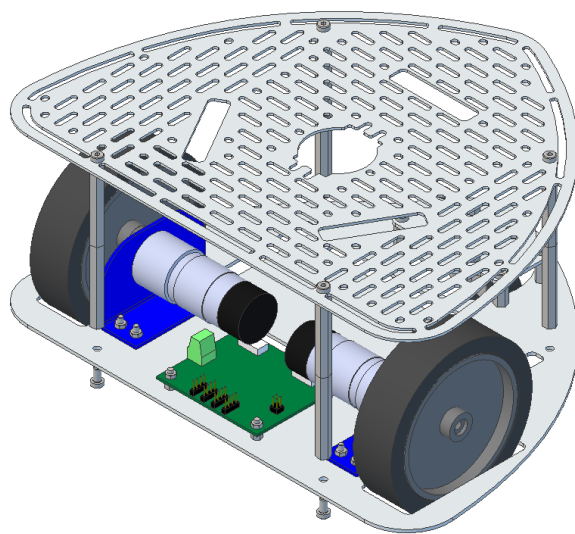


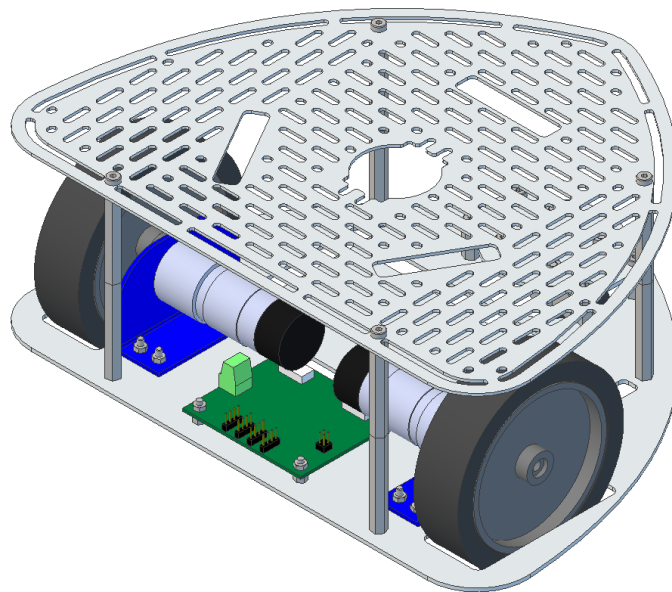
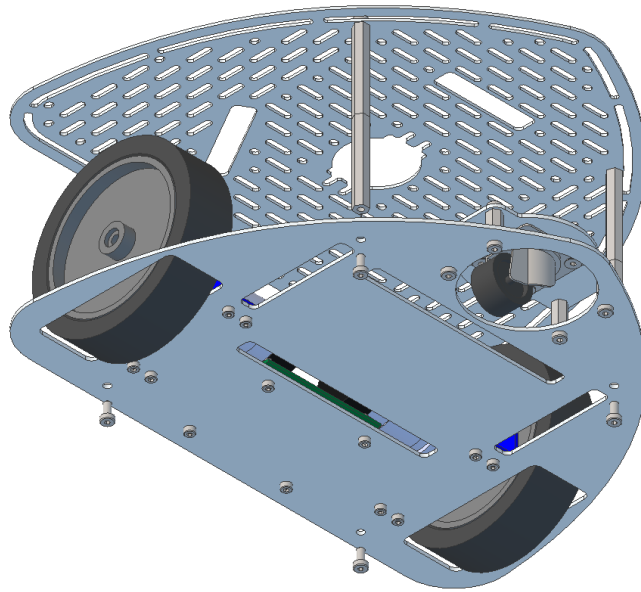
Schritt / Step 8



4x

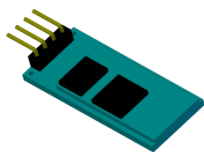
DIN 7984 M4x8 mm



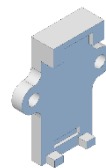


Schritt / Step 9

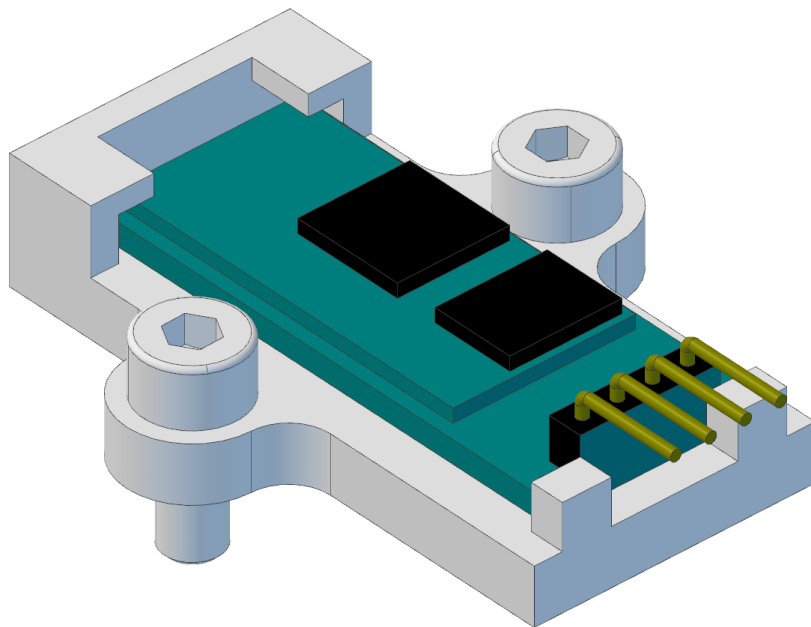
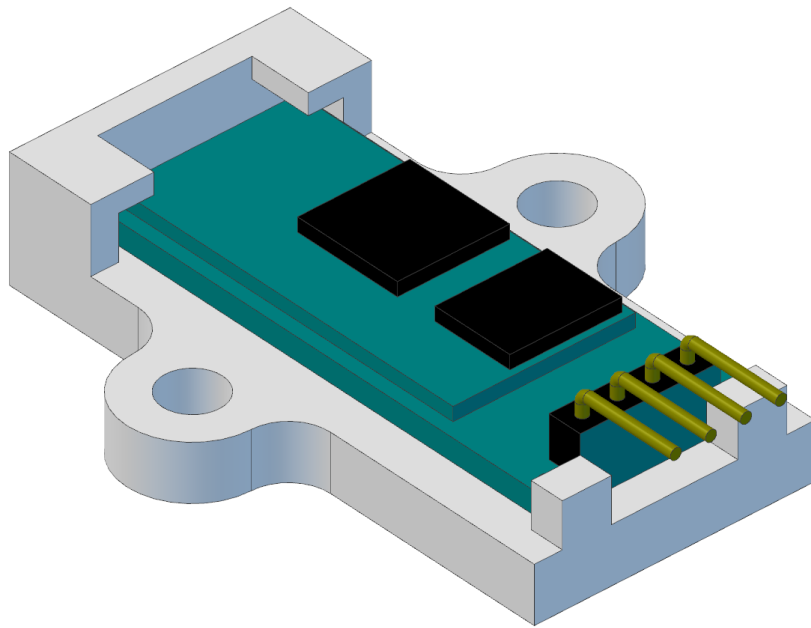
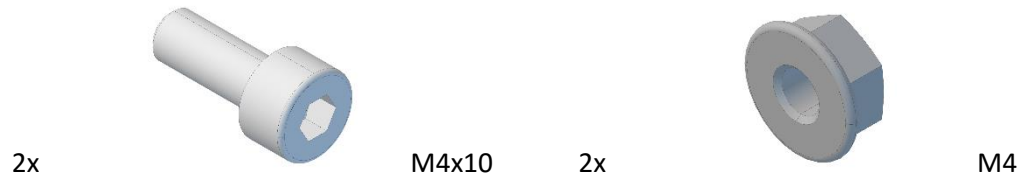
1x

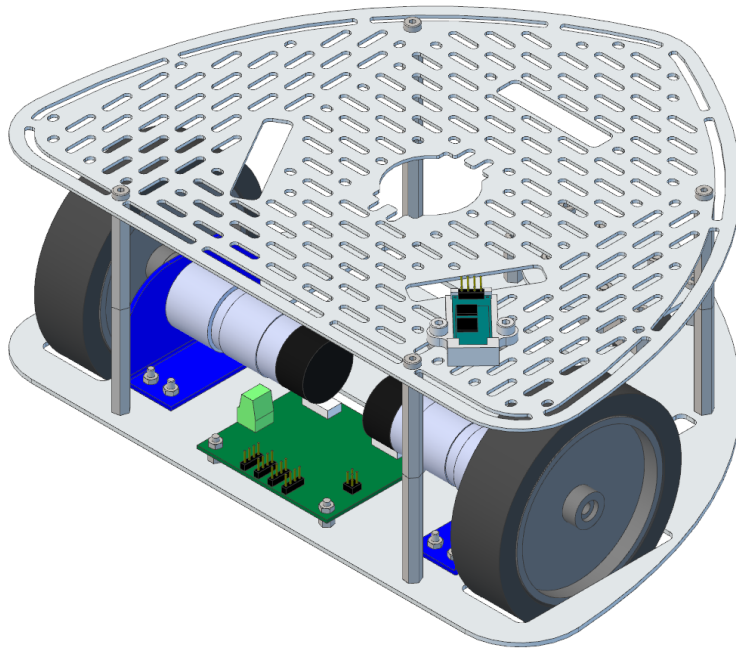


1x



WORLD OF ROBOTS



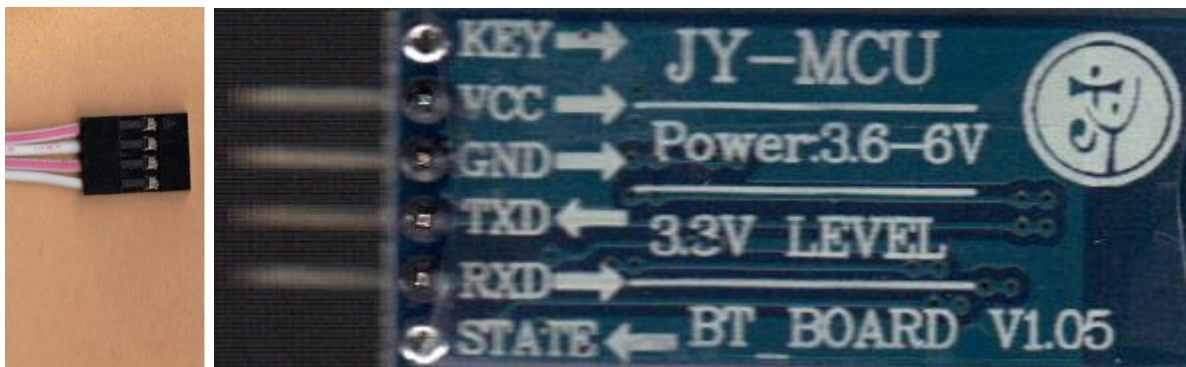


Schritt / Step 10

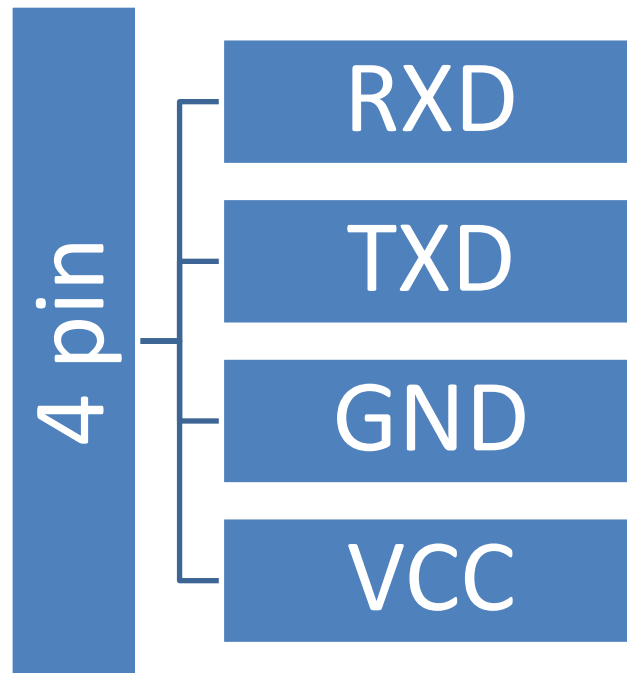
Das Kabel richtig anschließen / Connect the cable correctly

Verbinde den 4 pin Stecker / Connect the 4 pin plug

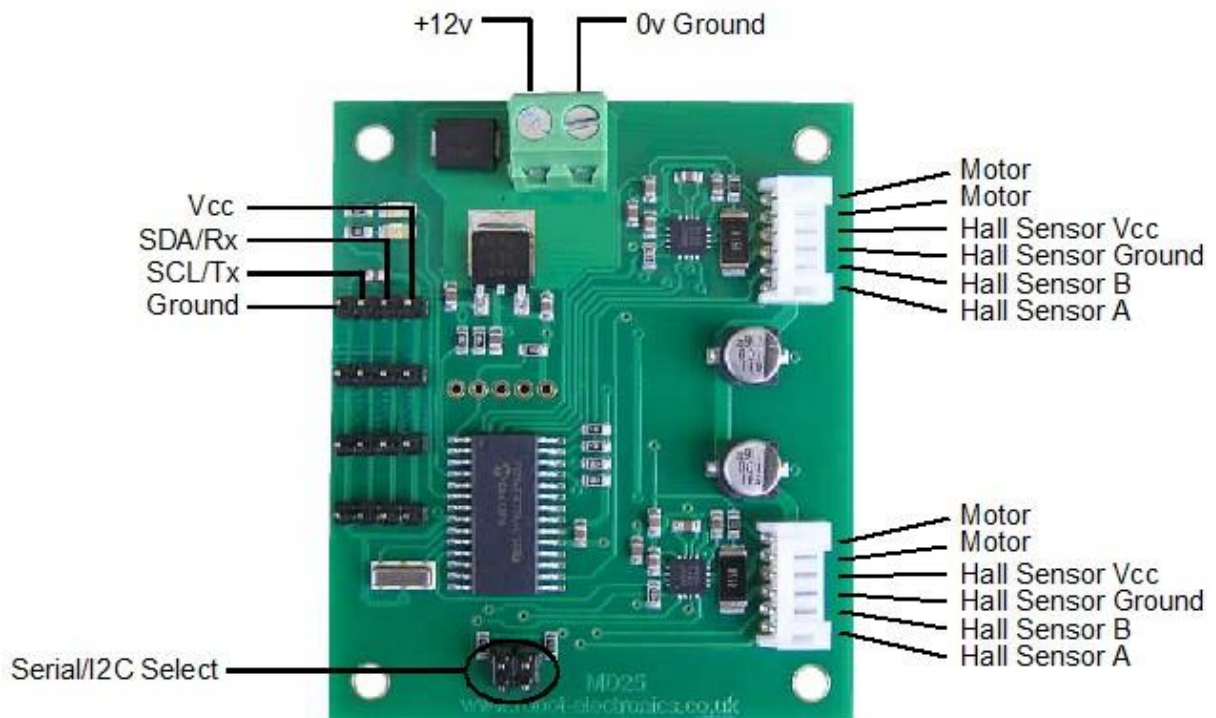
Ansicht von unter dem Bluetooth Board / View from below the Bluetooth board



View from top of Bluetooth board



Verbinde die 4 Kabel am MD25 / Connect the 4 cables to the MD25



WOR-0002	MD25
VCC	Vcc
GND	Ground

TXD	Rx
RXD	Tx

R (receive)

T (transmit)

Verbinde RXD mit Tx / Connect RXD with Tx

Verbinde TXD mit Rx / Connect TXD with Rx

Verbinde GROUND mit Ground / Connect GROUND with Ground

Verbinde VCC mit Vcc / Connect VCC with Vcc

Serielle Verbindung auswählen / select serial connection

Serial mode at 9600 bps, 1 start bit, 2 stop bits, no parity



Inbetriebnahme / Initial operation

Energie / Power

12 V

Connect 12 V Power

red LED on

Stationäre Energieversorgung / Stationary power supply for testing if required

Zum Testen falls gewünscht / For testing if required

Bestandteile / parts

- Labornetzteil / Laboratory power supplies
- Kabel für stationäre Tests über Labornetzteil / cable for stationary tests with laboratory power supplies

Beispiel / example:



<http://de.manu-systems.com/WOR-0028.shtml> / <http://en.manu-systems.com/WOR-0028.shtml>

Mobile Energieversorgung / mobile energy supply

Verbrauchsmaterialien / Consumables

Power-Sonic 12V 1,2Ah Blei-Vlies Akku AGM vds PS-1212

<http://de.manu-systems.com/PS-1212.shtml>

Power-Sonic 12V 1.2Ah Valve Regulated Lead Acid Battery AGM vds PS-1212

<http://en.manu-systems.com/PS-1212.shtml>

Zubehör für Verbrauchsmaterialien / Accessories for Consumables

Laden / Charge

Automatiklader AL 300 pro für 2-6-12V Akkus

<http://de.manu-systems.com/HT-1248217.shtml>

Automatic-Charger AL 300 pro for 2-6-12V Batteries

<http://en.manu-systems.com/HT-1248217.shtml>

R1 Akkuhalterung / R1 Battery Holder



<http://de.manu-systems.com/WOR-0012-0001.shtml>

<http://en.manu-systems.com/WOR-0012-0001.shtml>

Communication

Installation

Sie können das Anwendungspaket (apk-Datei) <http://de.manu-systems.com/R1%20Remote.apk> direkt auf Ihr Android-Gerät herunterladen. Nach dem Herunterladen können Sie die App installieren. Bitte beachten Sie, dass bei dieser Methode das Installieren von Nicht-Market Apps erlaubt ist. Dies können Sie unter Einstellungen - Anwendungen - Unbekannte Quellen (Installieren von Nicht-Market Anwendungen zulassen) (oder vergleichbar) einstellen.

Sie können zum Herunterladen auch den QR-Code scannen.

You can download the application package (apk-file) from <http://en.manu-systems.com/R1%20Remote.apk> directly to your Android-device. After downloading you can install

the app. Please note that installation of non-market apps must be enabled. You can enable this option under Settings - Applications - Unknown sources (Allow installation of non-Market applications) (or similar).

Alternatively, you can scan the QR-code for downloading.



Verbinden / Connecting

Nach dem Starten können Sie gekoppelte Bluetooth-Geräte sehen und nach Neuen suchen.

You can browse paired Bluetooth devices or discover new devices after starting the app.

Wählen Sie ein Gerät zum Verbinden aus Gekoppelte Geräte	Select a device to connect Paired devices
FE21S 00:02:C7:E4:F4:D6	FE21S 00:02:C7:E4:F4:D6
VW UHV 00:10:0A:E8:28:CF	VW UHV 00:10:0A:E8:28:CF
I7-640M C0:CB:38:FF:A9:22	I7-640M C0:CB:38:FF:A9:22

Nach Geräten suchen	Scan for devices
---------------------	------------------

Das Bluetooth-Modul erscheint als HC-06.

The Bluetooth-module of R1 appears as HC-06.

Suche nach Geräten...	Select a device to connect
Gekoppelte Geräte	Paired devices
FE21S 00:02:C7:E4:F4:D6	FE21S 00:02:C7:E4:F4:D6
VW UHV 00:10:0A:E8:28:CF	VW UHV 00:10:0A:E8:28:CF
I7-640M C0:CB:38:FF:A9:22	I7-640M C0:CB:38:FF:A9:22
Andere verfügbare Geräte	Other available devices
HC-06 20:13:05:15:02:14	HC-06 20:13:05:15:02:14

Beim Verbinden werden Sie aufgefordert eine PIN einzugeben. Geben Sie 1234 ein.

On connection you will be prompted to enter a PIN. Please enter 1234.



Steuerung / Driving

Die Steuerung erfolgt intuitiv durch Berühren des Displays im dunkelblau hinterlegten Bereich mit dem Koordinatenkreuz. Die Achse nach rechts oben entspricht dabei der Geschwindigkeit des linken Motors und entsprechend die Achse nach links oben der Geschwindigkeit der rechten Motors. Der berührte Punkt wird durch einen weißen Kreis gekennzeichnet. Die Motorgeschwindigkeiten werden dann durch die beiden Balken symbolisiert.

WORLD OF ROBOTS

Mit dem grünen Balken können Sie die Empfindlichkeit einstellen. Möchten Sie langsam und genau fahren ziehen Sie den Regler nach Links auf weniger Geschwindigkeit bzw. genauere Steuerung. Für Höchstgeschwindigkeit verkleinern Sie das Kontrollfeld, indem Sie den Regler am grünen Balken auf weiter rechts einstellen.

You can easily control the R1 by touching the display in the dark-blue area with the coordinate cross. The axis pointing right upwards corresponds to the left motor; the axis pointing left upwards corresponds to the right motor. The last touched point will be marked with a white ball. Motor speeds are represented by the two bars.

With the green bar you can adjust the sensitivity. Would you like to drive slowly and precisely drag the slider to the left for less speed or more precise control. For maximum speed, minimize the control panel by setting the slider on the green bar more to the right.